SOURCE SELECTION STATEMENT
SOLAR ELECTRIC PROPULSION DEMONSTRATION MISSION CONCEPT STUDIES

On September 1, 2011 the Evaluation Team for the Solar Electric Propulsion (SEP) Demonstration Mission Concept Studies Broad Agency Announcement (BAA) NNC11ZMA017K met with me and other senior NASA officials. This source selection statement documents the information discussed in that meeting, my independent analysis and the final selection of proposals for contract award

I. Procurement History

This BAA, released on June 21, 2011, solicited proposals for in-space solar electric propulsion mission concept studies, and sought industry input on technical solutions in support of high power solar electric propulsion systems. These studies are to capture potential system architectures and identify propulsion technology gaps. This effort will include architecture assessments of various solar power generation and electric propulsion options and how they can be employed to meet multiple mission objectives. The focus will be on developing system concepts to show extensibility of the demonstrated capabilities to future space exploration applications such as a 300 kW solar electric transfer vehicle. NASA will use results from these studies for project planning and implementation. The BAA provided a variety of technical objectives and capabilities for offerors to address in their proposals.

The BAA contemplated multiple awards of firm fixed-price contracts with each contract amount not to exceed $600,000. The period of performance for each contract shall be 135 days from award. Three (3) amendments were issued. Proposals were selected for negotiations leading to contract award based on the selection factors provided in the BAA and discussed below.

Fifteen (15) proposals were received by the due date of August 4, 2011 from the following Offerors:

Analytical Mechanics Associates Inc.
ATK Space Systems
Ball Aerospace & Technologies Corp.
Boeing
Busek Co. Inc.
Gray Research Inc.
Lockheed Martin Inc.
Mark H. Smith
Northrop Grumman Systems Corp.
Orbital Sciences Corp.
Orbital Technologies Corp.
Pratt & Whitney Rocketdyne
Skycorp Inc.

Spacedesign Corp.
3 6D Inc

II. Evaluation Approach and Criteria

The BAA Evaluation Team consisted of technical experts from several NASA Centers and from several sites of the Air Force Research Laboratory. Every member of the Evaluation Team was a Government civil servant. Upon completion of a detailed evaluation, the results were briefed and discussed with the Committee of Voting Members. The process culminated with the Voting Members consensus decision on all findings and a final evaluation of all proposals still under consideration. The Voting Members then briefed and discussed their consensus findings with me at the September 1, 2011 meeting.

A preliminary evaluation of each Proposal was conducted to determine whether the Proposal addressed the essential requirements of the BAA and, therefore, was acceptable for further consideration. As a result of this initial evaluation, it was determined that the Proposals received from Mark H. Smith and 3 6D Inc. did not address the essential requirements of the BAA.

3 6D Inc.: This proposal does not address the technical concept studies requirements of the Solar Electric Propulsion BAA. This proposal is based on technology that is not applicable, and is unrelated, to the solar electric propulsion field. The proposal is also incomplete as it does not contain a Statement of Work, price or cost information, past performance information, and a signed model contract.

Mark H. Smith: This proposal ends 8 pages into the incomplete technical discussion, at a point where the offeror submits an animation. This proposal is incomplete, as it does not contain a Statement of Work, price or cost information, past performance information, and a signed model contract.

These two proposals were determined to be unacceptable and were not further considered for award. After discussing the matter with the Evaluation Team, I agreed with its determination and did not further consider these Proposals in my deliberations.

The remaining Proposals were extensively evaluated for possible contract award using the evaluation criteria provided in the BAA, which were Technical Merit, Past Performance, and Price. The relative importance among the Factors was such that Technical Merit was more important than Past Performance, which was more important than Price; Technical Merit and Past Performance, when combined, were significantly more important than Price. Specifically, each proposal was evaluated according to the following Factors and Subfactors:

1.0 Factor 1 - Technical Merit

All subfactors are in descending order of importance within the Technical Merit factor.

Subfactor 1.1: Technical Approach
Subfactor 1.2: Capabilities
Subfactor 1.3: Data Rights/Export Control
Subfactor 1.4: Deviations and Exceptions

2.0 Factor 2 - Past Performance
3.0 Factor 3 – Price

RATING DEFINITIONS

Factor 1 - Technical Merit

Each proposal was evaluated to identify and document all strengths and weaknesses within the Technical Merit subfactors, classified as significant or otherwise. Following their deliberations, the voting members assigned an overall adjectival rating based on their findings for the Technical Merit Subfactors and presented that rating to the Selection Official. The rating scale below was used:

Rating	Definition
Blue	Proposal demonstrates excellent understanding of requirements and approach that significantly exceeds the Government's technical objectives. Proposal has exceptional strengths that will significantly benefit the Government.
Green	Proposal demonstrates acceptable understanding of requirements and approach that fully meets the Government's technical objectives.
Yellow	Proposal demonstrates shallow understanding of requirements and approach that only marginally meets the Government's technical objectives.
Red	Proposal fails to meet the Government's technical objectives. Requirements can only be met with major changes to the proposal.

Factor 2: Past Performance Evaluation

The offeror's relevant performance under previous trade study contracts as well as the relevancy and quality of past performance in contracts for the research and development of SEP systems/subsystems was assessed in the evaluation. The past performance evaluation is an assessment of the Government's confidence in the offeror's ability to perform the solicitation requirements. The Past Performance confidence rating for each

Offeror was presented to the Selection Official. Past Performance was evaluated for each offeror using the following levels of confidence ratings:

LEVEL OF CONFIDENCE	DEFINITIONS
Very High Level of Confidence	The Offeror's relevant past performance is of exceptional merit and is very highly pertinent to this acquisition; indicating exemplary performance in a timely, efficient, and economical manner; very minor (if any) problems with no adverse effect on overall performance. Based on the Offeror's performance record, there is a very high level of confidence that the Offeror will successfully perform the required effort. ** (One or more significant strengths exist. No significant weaknesses exist.)
High Level of Confidence	The Offeror's relevant past performance is highly pertinent to this acquisition; demonstrating very effective performance that would be fully responsive to contract requirements with contract requirements accomplished in a timely, efficient, and economical manner for the most part with only minor problems with little identifiable effect on overall performance. Based on the Offeror's performance record, there is a high level of confidence that the Offeror will successfully perform the required effort. ** (One or more significant strengths exist. Strengths outbalance any weakness.)
Moderate Level of Confidence	The Offeror's relevant past performance is pertinent to this acquisition, and it demonstrates effective performance; fully responsive to contract requirements; reportable problems, but with little identifiable effect on overall performance. Based on the Offeror's performance record, there is a moderate level of confidence that the Offeror will successfully perform the required effort. ** (There may be strengths or weaknesses, or both.)
Low Level of Confidence	The Offeror's relevant past performance is at least somewhat pertinent to this acquisition, and it meets or slightly exceeds minimum acceptable standards; adequate results; reportable problems with identifiable, but not substantial, effects on overall performance. Based on the Offeror's performance record, there is a low level of confidence that the Offeror will successfully perform the required effort. Changes to the Offeror's existing processes may be necessary in order to achieve contract requirements. ** (One or more weaknesses exist. Weaknesses outbalance strengths.)
Very Low Level of Confidence	The Offeror's relevant past performance does not meet minimum acceptable standards in one or more areas; remedial action required in one or more areas; problems in one or more areas which, adversely affect overall performance. Based on the Offeror's performance record, there is a very low level of confidence that the Offeror will successfully perform the required effort. ** (One or more deficiencies or significant weaknesses exist.)
Neutral	In the case of an Offeror without a record of relevant past performance or for whom information on past performance is not available, the Offeror may not be evaluated favorably or unfavorably on past performance.

Factor 3: Price

The voting members performed an overall reasonableness of the proposed firm fixed price to the Government and the extent to which the Offeror complied with the specified dollar limits in the BAA. The proposed firm fixed price contract value and its reasonableness was presented to the Selection Official.

III. Evaluation Summaries

The following table summarizes the overall evaluation of each factor for each proposal:

Company	Technical Merit	Past Performance Level of Confidence	Price
Ball Aerospace & Technologies Corp.	Blue	Very High	$600,000.00 Reasonable
Boeing	Blue	Very High	$599,927.00 Reasonable
Lockheed Martin Inc.	Blue	Very High	$597,677.00 Reasonable
Analytical Mechanics Associates Inc.	Green	High	$599,725.00 Reasonable
Northrop Grumman Systems Corp.	Green	Very High	$553,818.00 Reasonable
Pratt & Whitney Rocketdyne	Green	High	$599,855.00 Reasonable
ATK Space Systems	Green	High	$598,893.00 Reasonable
Gray Research Inc.	Green	Very High	$552,348.90 Reasonable
Busek Co. Inc.	Yellow	High	$599,967.87 Reasonable
Orbital Sciences Corp.	Yellow	Very High	$599,961.00 Reasonable
Orbital Technologies Corp.	Red	High	$600,000.00 Reasonable
Skycorp Inc.	Red	High	$597,328.10 Reasonable
Spacedesign Corp.	Red	Low	$600,000.00 Reasonable
Mark H. Smith	Unacceptable Proposal		
3 6D Inc.	Unacceptable Proposal		

Summaries of the Technical Merit factor findings for each offeror are below. Twelve of the proposals were rated as Very High or High in the Level of Confidence for the Past Performance Factor. The exception was Spacedesign Corp, which was rated at a Low Level of Confidence. With respect to past performance, each of the twelve proposals receiving a Very High or High level of confidence Past Performance rating demonstrated relevant experience in performing trade studies and/or research and development work related to solar electric propulsion systems and subsystems. All proposals were rated as "Reasonable" for the Price Factor. Regarding price, each offeror's proposed price was determined to be fair and reasonable based on the proposed skill mix for direct labor and proposed other direct costs. Both Past Performance and Price were rated in accordance with the Rating Definitions explained in Section II above. The summaries of the Technical Merit findings are as follows:

Ball Aerospace & Technologies Corp.

Under the Technical Merit factor, Ball Aerospace's proposal was rated "Blue" and received one significant strength, three strengths, and two weaknesses. The significant strength is: The offeror's proposed Point of Departure provides a cost effective means to demonstrate solar array deployment and spiral out capability. The strengths are:

1. The offeror has presented a thorough decomposition from high-level objectives to subsystem and component level requirements.
2. The offeror proposed comprehensive trade study process and list of trades is proposed as part of the offeror's mission concept study plan.
3. The Offeror's team consists of spacecraft and propulsion manufacturers and has demonstrated capabilities with spaceflight concept studies, design, manufacture, integration, test and flight.

The weaknesses are:

1. The proposal team does not provide evidence that they have solar array designer and developer as part of the team to support their proposed solar array technology trades.
2. The offeror's proposal is unclear concerning what specific data, if any, is subject to limited rights and what data will be provided with unlimited rights.

Boeing

Under the Technical Merit factor, Boeing's proposal was rated "Blue" and received two significant strengths, one strength, and two weaknesses. The significant strengths are:

1. The offeror and their team present a comprehensive study flow plan that includes a prioritized set of trades and analyses.
2. The offeror and team have demonstrated strong capabilities and modeling and analysis tools in the areas of electric propulsion, solar arrays and spacecraft development and integration.

The strength is: The offeror's Point of Departure contains both technical depth and breadth, and the proposed vehicle concept provides extensibility to a 300 kW SEP vehicle.

The weaknesses are:

1. The offeror's proposal did not sufficiently address some of the critical technical issues of the array and the propulsion system.
2. Data first developed in performance of the contact will be unlimited rights data and the offeror provided no further discussion concerning use of previously developed data or information that may be subject to limited rights.

Lockheed Martin, Inc.

Under the Technical Merit factor, Lockheed Martin's proposal was rated "Blue" and received two significant strengths, two strengths and two weaknesses. The significant strengths are:

1. The offeror showed an excellent system study to justify the Point of Departure spacecraft design.
2. The offeror possesses highly relevant and comprehensive experience and expertise in the areas of mission concept studies and spacecraft development.

The strengths are:

1. The offeror demonstrates quality, depth and thoroughness of the technical approach, excellent knowledge of SEP components and system technology and a Point of Departure that is highly extensible to 300 kW.
2. The offeror understood the tight schedule and budget that they were constrained to, but were also cognizant of the need to develop technologies that were extensible to a 300 kW system, representing a good balance between risk reduction and technology development to support extensibility.

The weaknesses are:

1. The offeror did not adequately address the use of solar array architecture with regard to extensibility and scale-up risks.
2. The offeror "anticipates" deliverables will be provided with unlimited data rights but provided no further discussion concerning previously developed data or information that may be subject to limited rights.

Analytical Mechanics Associates, Inc.

Under the Technical Merit factor, Analytical Mechanics Associates' proposal was rated "Green" and received two significant strengths and four weaknesses. The significant strengths are:

1. The offeror proposed an extensive list of trades including specific power and propulsion technology options and mission architectures.
2. The offeror has comprehensive analytical capability in the areas of trade studies, design analysis, and technology analysis making the approach well suited for performing a mission concept study.

The weaknesses are:

1. The offeror's proposed Point of Departure is not directly extensible to a 300 kW-class SEP.

2. The proposed schedule for an in-space flight demonstration is not responsive to the flight demonstration mission provided in the BAA.
3. This offeror does not have spacecraft development or operation experience which would be advantageous in formulating a potential SEP flight demonstration mission.
4. The offeror's use of proprietary data developed outside would be provided with limited rights restrictions on its usage.

Northrop Grumman Systems Corp.

Under the Technical Merit factor, Northrop Grumman's proposal was rated "Green" and received two significant strengths, two strengths, one significant weakness, and four weaknesses. The significant strengths are:

1. The offeror's study plan, technical approach, and use of evaluation criteria were detailed, clear and comprehensive.
2. The offeror has demonstrated excellent capabilities with relevant trade studies, spacecraft design, fabrication and integration.

The strengths are:

1. The offeror's proposed use of selected high technology readiness level components for segments of the Point of Departure, except for power, allows an efficient use of resources and return on the technology investment.
2. The offeror presents a thorough list of system level critical issues including system integration, spacecraft charging, radiation exposure, electric propulsion plume and electro-magnetic interference interactions.

The significant weakness is: The offeror required NASA to make a contracting arrangement directly with the proposed team member. Should NASA be unable to fulfill that requirement, the offeror proposed subcontracting with another named firm. The first requirement puts the onus on the Government to arrange funding for the offeror's team mate. This has a serious impact on the timely contract award to this offeror, delaying receipt of the study results and affecting NASA's schedule seriously. The alternative subcontract method does not address whether there would be an impact on timely award while the subcontract is arranged and the subcontract is not priced in the proposal.

The weaknesses are:

1. The proposal gave inadequate attention to component technical challenges and risks associated with several specific areas associated with the power system.
2. The offeror proposed to use off-the-shelf electric propulsion thrusters.
3. The offeror has not identified in the proposal solar array and electric propulsion space flight subsystem development expertise.
4. The offeror states that they do not anticipate the need to assert data rights to deliverables generated by the study but provided no further discussion concerning previously developed data or information that may be subject to limited rights.

Pratt & Whitney Rocketdyne
Under the Technical Merit factor, Pratt & Whitney Rocketdyne's proposal was rated "Green" and received one significant strength, three strengths and one weakness.

The significant strength is: The offeror's use of engineering trades and analysis to optimize the system design, specifically the electric propulsion system with the power management and distribution system, is extensive and well conceived.

The strengths are:

1. The offeror's Point of Departure concept was extremely well defined, technically sound, and demonstrated a focused, realistic approach to reaching NASA's 300kW performance goals.
2. The offeror proposed a detailed project approach to minimize project cost and schedule, while staying focused on SEP technology advancement.
3. The offeror's team has solid capabilities and experience in solar arrays, electric propulsion, spacecraft subsystem development, and spacecraft analysis.

The weakness is: The proposed array type and thruster in the Point of Departure are not directly extensible to a 300kW SEP system and multi-thruster operation.

ATK Space Systems
Under the Technical Merit factor, ATK Space Systems' proposal was rated "Green" and received one significant strength, two strengths and four weaknesses.

The significant strength is: The offeror demonstrates a solid Point of Departure technical approach as well as extensible array and electric propulsion options.

The strengths are:

1. The offeror's proposed systems engineering approach provided detailed methodology including power and propulsion sub-trades.
2. The offeror is one of the leading deployable structures engineering groups.

The weaknesses are:

1. The offeror did not adequately detail the critical issues and technical challenges associated with maturing the power system on the Point of Departure demonstration mission.
2. The offer's proposal provided an insufficient assessment of key operational issues, challenges, and risks.
3. The offeror's proposal does not demonstrate that the offeror's team has the expertise with developing space flight electric propulsion subsystems.
4. The Offeror has proposed specific identified data that would be provided with limited rights.

Gray Research Inc.
Under the Technical Merit factor, Gray Research's proposal was rated "Green" and received one significant strength, two strengths, and two weaknesses.

The significant strength is: The offeror's team has significant relevant expertise and capability required to execute the concept study and for designing and developing a spacecraft.

The strengths are:

1. The offeror presents a thorough understanding of the technical objectives and the offeror presents a thorough set of risks that will need to be reduced in order to achieve a successful SEP vehicle.
2. The offeror's proposed solar array baselined for the Point of Departure demonstration mission has the potential to be high specific power, high stiffness, high strength, ground testable, low mechanical complexity, rooted in heritage, and highly scalable.

The weaknesses are:

1. The offeror does not address the technical challenges for the high power system. The offeror's risk assessment failed to capture the development risks inherent with the use of their Point of Departure propulsion system.
2. The offeror states that proprietary data will be delivered with Limited Rights.

Busek Co. Inc.

Under the Technical Merit factor, Busek's proposal was rated "Yellow" and received three strengths, one significant weakness and two weaknesses. The strengths are:

1. The offeror's technical approach incorporates the ability to potentially assess direct-drive vs. conventional PPU, as well as the proven heritage of the two proposed Point of Departure options offer potential for significant launch and integration cost savings.
2. The offeror's proposal contains many good options and innovations for trade studies.
3. The offeror has expertise in designing and developing space-qualified EP thruster systems.

The significant weakness is: The offeror did not provide adequate information on solar array technical challenges and trades suggesting a lack of understanding in this area.

The weaknesses are:

1. The offeror did not list demonstrated capabilities for designing and developing space-qualified systems in the area of large-area deployable solar arrays.
2. The offeror states that although data developed in the proposed effort will have unlimited rights, there is some pre-existing data that will have limited rights or SBIR data rights. They provided no further discussion concerning previously developed data or information that may be subject to limited rights.

Orbital Sciences Corp.

Under the Technical Merit factor, Orbital Sciences' proposal was rated "Yellow", and received three strengths, one significant weakness, and one weakness. The strengths are:

1. The offeror provided a comprehensive system level trade approach for the concept study with detailed descriptions of the content of the deliverables.
2. The offeror's proposed power system is a promising concept that is potentially extensible to 300kW missions.
3. The offeror will be able to leverage their experience as flight system integrator for Dawn and Deep Space 1 directly to the SEP technology demonstration mission.

The significant weakness is: The offeror proposes a singular power and electric propulsion technology to be studied for the mission concept, and does not propose to trade other power and electric propulsion options.

The weakness is: The offeror's proposed Point of Departure mission does not address the high-risk areas of Low Earth Orbit (LEO) and the Van Allen belts.

Orbital Technologies Corp.
Under the Technical Merit factor, Orbital Technologies' proposal was rated "Red" and received three significant weaknesses and two weaknesses. The significant weaknesses are:

1. The offeror provides insufficient detail on the Point of Departure power system including array and power management and distribution (PMAD) details, suggesting a lack of understanding of the technical objectives of the solicitation.
2. The offeror's proposal did not address the critical challenges of the vehicle or power subsystems, including high power management and radiation exposure, suggesting a lack of understanding of vehicle-level issues.
3. The offeror's capabilities are centered on a single thruster technology only, with no SEP flight or hardware experience in power systems, arrays, structures, system design, or operations.

The weaknesses are:

1. The offeror's singular thruster concept has low technical maturity and low specific impulse, making it a risk to mission success for a 300 kW system.
2. There was no discussion of data rights or export control included in the proposal.

SkyCorp, Inc.
Under the Technical Merit factor, SkyCorp's proposal was rated "Red" and received one strength, four weaknesses, and three significant weaknesses.

The strength is: The offeror's technical approach uses a very limited number of new technologies to provide a low risk, innovative, modular SEP demonstration that has potential applicability to commercial, NASA, and DOD applications outside of the BAA solicitation.

The significant weaknesses are:

1. The offeror's proposed technical approach has poor extensibility to 300 kW class exploration.
2. The offeror's technical approach is not a sustainable solution for large deployable structures in space.
3. The offeror will retain all rights to data developed by them prior to and during this contract.

The weaknesses are:

1. The proposed SEP tug spiraling transfer performance is tied to best time of the year which offers poor design performance robustness not extensible to the 300 kW-class mission.
2. The offeror has not indicated an understanding of how their proposed thruster operates.
3. The offeror did not provide a sufficient or in-depth logical methodology to achieve, or thorough knowledge of, the technical objectives of the BAA. The offeror's trades primarily do not address BAA objectives.
4. The offeror cites no relevant experience developing space-qualified systems applicable to the SEP system flight demonstration.

Spacedesign Corp.

Under the Technical Merit factor, Spacedesign's proposal was rated "Red" and received four significant weaknesses. The significant weaknesses are:

1. The offeror's proposal does not adequately address the goals of the solicitation. The offeror's proposed singular approach for BAA contract execution is studying a technique that relies on an interaction with the Earth's magnetic field to generate a propulsive force and does not work in heliocentric space. The offeror does not propose to examine alternate systems in their trade space. This concept does not support missions such as those to earth-moon L1 or near-Earth asteroid and is nonresponsive to the mission space identified in the BAA.
2. The offeror's Point of Departure concept and technical approach were not adequate with little detail regarding the operational concept and propulsion/power system.
3. The offeror cites no relevant experience developing space-qualified systems applicable to the SEP system flight demonstration.
4. The offeror will retain all rights to data developed by them prior to and during this contract.

IV. Decision

The evaluation findings for each proposal, including descriptions of all significant strengths, strengths, weaknesses, and significant weaknesses, were presented to and discussed with me. I carefully questioned the Evaluation Team concerning their findings. I found that the evaluations performed and resulting findings developed by the Voting Members of the Evaluation Team were detailed, consistent with the evaluation criteria in the BAA, and provided clear descriptions of the merits of each proposal. I believe that

the Evaluation Team did a thorough job, and I accept their findings; however, for reasons explained below, I disagree as to the significance of one identified weakness.

In making my selection decision, I adhered carefully to the evaluation criteria set forth in the BAA, giving heaviest weight to Technical Merit, the next heaviest weighting to Past Performance, and the lowest weighting to Price. Within the Technical Merit factor, I gave the heaviest weighting to the Technical Approach subfactor, followed by the other subfactors in decreasing order of importance.

After extensive discussions, I concluded that the evaluated price of the proposals from each of the thirteen (13) evaluated firms listed above were reasonable. Moreover, I was satisfied that the Past Performance ratings for each of the thirteen (13) proposals were justified, and I agreed with the Evaluation Team's conclusion that there was a very high or high level of confidence that twelve of the offerors could perform the contract requirements successfully, and that Spacedesign had a low level of confidence of performing the contract requirements successfully.

Regarding the Technical Merit evaluation of each of the thirteen (13) proposals, I examined the findings of the offerors in the "Red" Technical Merit category, namely Orbital Technologies Corp., Skycorp Inc., and Spacedesign Corp. I found that each case these offerors had more than one Significant Weakness in Technical Merit that would significantly raise the risk of unsuccessful performance. I did not identify any advantages in Past Performance or Price that would offset these risks. Therefore, I eliminated these three offerors in the "Red" category from further consideration.

I then considered offerors in the "Yellow" Technical Merit category, namely Busek Co. Inc. and Orbital Sciences Corp. I found that in each case these offerors had one Significant Weakness in Technical Merit that would significantly raise the risk of unsuccessful contract performance with no offsetting advantages in terms of Past Performance or Price. I therefore eliminated these two offerors from further consideration.

I then considered the offerors in the "Blue" Technical Merit Category. My discussion below is focused on the Technical Merit factor because I did not identify any Past Performance or Price advantages of the offerors in the "Green" Technical Merit category that would offset the "Blue" offerors' technical superiority. My conclusion for each offeror follows:

Ball Aerospace & Technologies Corp.:
I was impressed with the Ball Aerospace proposal. I agreed with the Evaluation Team that the proposal offered a SEP point of departure that has a low risk, high return approach. The specific array and propulsion options identified in their Point Of Departure provide extensibility to a 300 kW class SEP vehicle. The proposal demonstrated an understanding of the key critical challenges for SEP spacecraft and operations through a set of trade studies and a trade study process. These trade studies and process are of particular importance to the goals of the solicitation because it will

provide a framework for identification of useful concepts for the SEP Technology Demonstration Mission. This meaningfully distinguishes this proposal from proposals in the "Green" Technical Merit category. The proposal also presents a framework for evaluating technology options and risks. Based on these attributes and the other strengths described in the findings, the proposal's relatively minor weaknesses, and the proposal's Price and demonstrated solid Past Performance, I selected this proposal.

Boeing:
I agreed with the Evaluation Team's findings based on the Boeing proposal's comprehensive study plan and prioritized set of trades. The technical approach outlined in the proposal identified important system level effects that are critical to both the flight demonstration and the 300 kW class vehicle, which meaningfully distinguishes this proposal from those in the "Green" Technical Merit category. The team identified in the proposal has strong capabilities in many of the areas containing technical challenges for evolution of SEP to 300 kW class systems. Based on these attributes, the other strengths described in the findings, the proposal's relatively minor weaknesses, the proposal's reasonable Price and demonstrated solid Past Performance, I selected this proposal.

Lockheed Martin Inc.:
I was impressed with the proposal from Lockheed Martin. I concur with the Evaluation Team that it offered a very good technical approach supported by a complete system study to justify the options selected for their Point of Departure, thereby re-anchoring their Point of Departure in the trade space. This meaningfully distinguishes this proposal from those in the "Green" Technical Merit category. The proposal shows that technology off-ramps for all technologies will be examined in the event technology maturation does not meet objectives. The proposal indicates that Lockheed Martin has an excellent knowledge of SEP components and will consider a good balance between risk reduction and technology development to support extensibility. Based on these attributes, the other strengths described in the findings, the relatively minor weaknesses, the proposal's reasonable Price and demonstrated solid Past Performance, I selected this proposal.

I then considered the offerors in the "Green" Technical Merit category for the last two awards.

Analytical Mechanics Associates, Inc.
Consistent with the findings of the Evaluation team, I found the proposal from Analytical Mechanics Associates to contain an extensive list of trades centered around the technical challenges of the SEP power and propulsion systems. The methodology described in the proposal represents a clear and comprehensive path from high-level stakeholder needs through requirements to system conceptualization. The diversity of studies proposed is more useful to the Government than the other "Green" rated proposals because a comprehensive set of studies will provide a greater possibility of achieving the goals of the technology demonstration mission. The proposal offers a significant set of capability to perform those proposed trade studies. Based on these attributes, the other strengths described in the findings, the relatively minor weaknesses, the proposal's reasonable Price and demonstrated solid Past Performance, I selected this proposal.

Northrop Grumman Systems Corp.
I agree with the Evaluation team's findings on the proposal from Northrop Grumman. The proposal presented a technical approach and set of power and propulsion trades beyond those selected for their Point of Departure, which is of great interest to NASA in order to arrive at a robust concept for the SEP technology demonstration mission. The offeror also demonstrated an understanding of not just the subsystem level challenges, but also the critical system level issues.

However, I disagree with the Evaluation team's significant weakness finding concerning the offeror's teaming arrangement. I find that in light of the budget and programmatic schedule now known, the urgency of making an immediate award has diminished in importance from the originally anticipated schedule. Therefore, the proposed arrangement is only a weakness, rather than a significant weakness, under Subfactor 1.4 Deviations and Exceptions. I also note that Subfactor 1.4 was the least important subfactor under Technical Merit. Based on these attributes, the other strengths described in the findings, the relatively minor weaknesses, the proposal's reasonable Price and demonstrated solid Past Performance, I selected this proposal with the caveat that negotiations should be entered into to resolve the teaming arrangement issue and ensure that the contract's firm fixed price does not exceed the BAA stated contract maximum amount.

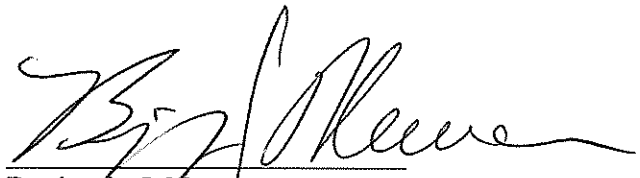
I gave careful consideration to the remaining offerors in the "Green" category. Regarding the Pratt & Whitney Rocketdyne proposal, I gave full credit to the offeror's engineering trades and analyses, and other strengths. However, Pratt & Whitney Rocketdyne's trades and analyses were less comprehensive than those of either Analytical Mechanics Associates Inc. or Northrop Grumman. Northrop Grumman also had a superior Past Performance rating and a lower price than Pratt & Whitney Rocketdyne.

Regarding the ATK Space Systems' proposal, the engineering trades analyses were less complete than those of Analytical Mechanics Associates Inc. and Northrop Grumman. The Government would not get the diverse and comprehensive power and propulsion trades from ATK Space Systems as they would from

Analytical Mechanics Associates Inc. and Northrop Grumman. Northrop Grumman also had a superior Past Performance rating and a lower price than ATK.

I considered the Gray Research, Inc. proposal. Gray did propose engineering trades analyses, however, these were significantly less comprehensive than those of Analytical Mechanics Associates Inc. or Northrop Grumman, as is reflected in the fact that Gray did not receive a significant strength for its trades analyses. I gave consideration to Gray's Very High Past Performance rating that was somewhat higher than Analytical Mechanics Associates Inc.'s, and to its somewhat lower price. However, given the importance of these trades analyses to the successful performance of the required work, these advantages were insufficient to overcome Analytical Mechanics Associates Inc.'s and Northrop Grumman's technical superiority in light of the higher importance of the Technical Merit factor in the published evaluation scheme.

As a result of my independent integrated analysis of the proposals and in accordance with the selection factors set forth in the BAA, I selected the following proposals for negotiations leading to a possible award: Ball Aerospace & Technologies Corp., Boeing, Lockheed Martin Inc., Analytical Mechanics Associates, Inc., and Northrop Grumman Systems Corp.



9/9/2011

Benjamin J. Neumann
Director, Advanced Capabilities Division
NASA Source Selection Authority

Date